

It would be interesting to know whether this absolute want of uniformity found among Burchell's Zebras in the Transvaal is peculiar to this country, or whether it is the case throughout Africa south of the Zambesi. Obviously it would be very dangerous to attempt any classification from isolated museum specimens obtained from the Transvaal at any rate.

Dr. Gunning proposes, I understand, to deal more fully in the forthcoming 'Annals' of the Transvaal Museum with a matter which I here only lightly touch upon.

42. On *Dipteropeltis* \*, a New Genus of the Crustacean Order Branchiura. By W. T. CALMAN, D.Sc., F.Z.S.†

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(Plate LXXXIV.‡)

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The specimens described in this paper were presented to the British Museum twenty years ago by Spencer Moore, Esq., by whom they were collected in Southern Brazil. They were found among a number of specimens of *Dolops longicauda* Heller bearing the label "Parasite on the gills and body of the fish known all up the river as 'Dorado' from its golden colour. From Corumbà and neighbourhood, Matto Grosso."

DIPTEROPELTIS HIRUNDO §. (Pl. LXXXIV. figs. 1, 2.)

Calman, Abstract P. Z. S. 1912, p. 34 (May 28th).

*Description of female*.—The most striking feature of the species is the form of the carapace, the lateral lobes of which are drawn out into narrow lanceolate wings directed backwards and extending far beyond the tips of the long abdominal lobes. The wings are fleshy in texture, traversed by numerous branching blood-channels, but without spines or other armature on the under surface.

The head is small, defined on each side from the carapace wings

\* The complete account of the new form described in this paper appears here, but since the name and a preliminary diagnosis were published in the 'Abstract,' it is distinguished by being underlined.—EDITOR.

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‡ For explanation of the Plate see p. 766.

§ For definition of the genus see p. 766.

by a shallow antero-lateral sinus from which two converging grooves run in on the dorsal surface. These grooves unite into one on each side, but the resulting groove dies out before reaching the middle line. A pair of inter-ocular chitinous rods are well-marked, closely approximated in front, diverging posteriorly, and united by an indistinct articulation with a nearly parallel posterior pair. The paired eyes are very small and close together near the front margin. The unpaired eye could not be detected.

The free thoracic region is not distinctly segmented; it is of equal width throughout and more than three times as long as wide.

The abdominal lobes are very long, narrowly lanceolate, and cleft nearly to the base. No trace of furcal rami can be found.

The antennules and antennæ (fig. 3) are very minute and nearly hidden from view under the in-turned front margin of the head. The antennules, in particular, are very easily overlooked; they are not divided into segments but have a blunt lobe at the base carrying a short apical tooth. The antennæ are about the same length, and consist of a stout basal part and a subglobular terminal part separated from it by a constriction.

The mouth-parts form a prominent cone (fig. 4). The two large and well-separated lobes of the upper lip are unarmed. The lower lip bears a pair of slender conical papillæ ("maxillæ" of Claus) which project slightly from the opening of the mouth. The mandibles are crescentic in form, with the concave edge very finely serrated and the convex edge bearing a few teeth near the tip.

In front of the oral cone and continuous with it at the base is a papilla, directed forward, having at its tip the opening of a duct. This, no doubt, represents the sheath of the preoral "sting" of *Argulus*, but no trace of the spine or sting itself could be detected in the dissection of two specimens. At the base of this papilla and of the mouth-cone are groups of very large cells, presumably glandular, with deeply-staining nuclei.

The suckers (first maxillæ, second maxillæ, or first maxillipeds of various authors) are placed close together in front of the mouth-cone, generally concealing altogether the preoral papilla. In place of the usual radial supports, the whole of the membranous border of the sucker is covered with discoidal scales (fig. 5).

The maxillipeds (fig. 6) (maxillæ of some authors) are very short, very stout at the base, and tapering rapidly to the tip. They are each composed of five segments, of which the second and third have numerous pectinate or branched spines on the ventral and anterior surfaces. The terminal segment bears two minute claws and a process which lies alongside of them.

The successive pairs of legs (figs. 7-10) are set wide apart from each other along the sides of the thoracic region. The rami are in all cases shorter than the protopodite and carry only a few short setæ; there is no flagellum on any of the legs. In the first

pair the endopod may be a good deal shorter than the exopod, or, as in the specimen figured, nearly equal to it; both rami are unsegmented. In the second pair also the rami are unsegmented, and the endopod is from about one-half to two-thirds as long as the exopod. In the third and fourth pairs the rami are subequal and the endopod is divided into two subequal segments. The basal lobe of the protopodite in the fourth pair is tongue-shaped, with a slight protuberance at the base of its distal edge.

*Dimensions of Holotype in millimetres.*

Length of body to tip of abdominal lobes.....	20.0
Total length to tip of carapace wings .....	26.0
Breadth of head .....	2.5
Length of thoracic region .....	8.0
Breadth of thoracic region .....	2.5
Breadth of wing at base .....	1.8
Greatest breadth of wing, at about 8 mm. from base	4.8
Length of abdominal lobes.....	6.8
Greatest breadth of abdominal lobes.....	1.3
Length of antennules and antennæ, about .....	0.13
Length of oral cone.....	0.5
Greatest diameter of sucker .....	1.1
Length of second leg .....	1.8
Diameter of eyes, about .....	0.1
Distance apart of eyes, about.....	0.45

*Locality.*—Corumbà, on the Paraguay River, Matto Grosso, Brazil. Four female specimens taken (in company with *Dolops longicauda*) on the fish known as “Dorado” (probably a species of *Salminus*).

*Holotype.*—Female, No. 92.10.24.2 in British Museum Register of Crustacea.

*Affinities.*—In having the so-called maxillæ or first maxillipeds modified into suckers this species differs from the genus *Dolops*, and in possessing antennules and a preoral papilla it differs from *Chonopeltis*. From all the species hitherto referred to *Argulus* it differs in (1) the remarkable form of the lateral wings of the carapace; (2) the length of the abdominal lobes and the absence of furcal rami, in which characters it resembles some species of *Dolops*; (3) the entire absence of conspicuous spines or hooks on the under side of the body and appendages, in which it resembles *Chonopeltis*; (4) the vestigial condition of antennules and antennæ; (5) the absence of a spine or sting on the preoral papilla; (6) the absence of the usual radial supports on the disc of the suckers. Some of these characters, especially Nos. 1, 3, and 6, are possibly not of great systematic importance, but together they seem to show that the new form is less closely related to any of the species included in the genus *Argulus* than

these are to one another. I have proposed, therefore, to establish for it a new genus, which may be defined as follows:—

DIPTEROPELTIS.

Calman, Abstract P. Z. S. 1912, p. 34 (May 28th).

Argulidæ with the so-called maxillæ modified as suckers; with the preoral papilla present, but without a spine; with antennules and antennæ very minute, imperfectly segmented; without large spines or hooks on under side of carapace, body, or appendages: without furcal rami on the abdominal lobes; with the lateral wings of the carapace greatly elongated.

Genotype.—*D. hirundo* Calman.

It is to be noted that the single species of *Chonopeltis*, *C. inermis* Thiele\*, is known only from a single specimen (from Lake Nyasa). It is not at all impossible, therefore, that the antennules, if they are as small as in *Dipteropeltis*, may have escaped observation, and it is even possible, though less probable, that an unarmed preoral papilla may be present. Should this prove to be the case it is doubtful whether, in spite of the great difference in the form of the carapace, the separation of *Dipteropeltis* from *Chonopeltis* could be maintained.

EXPLANATION OF PLATE LXXXIV.

(The magnifications given are only approximate.)

- Fig. 1. *Dipteropeltis hirundo*. Female (holotype), from the dorsal side.  $\times 3$ .  
 2. Anterior part of body of same specimen from ventral side. The suckers have been drawn apart and slightly backwards. In the preserved specimens they meet in the middle line and entirely conceal the preoral papilla.  $\times 6$ .  
 3. Antennule and antenna.  $\times 450$ .  
 4. Tip of oral cone from antero-ventral aspect.  $\times 100$ .  
 5. Part of membranous margin of one of the suckers.  $\times 160$ .  
 6. Maxilliped.  $\times 20$ .  
 7. Leg of first pair.  $\times 20$ .  
 8. Leg of second pair.  $\times 20$ .  
 9. Leg of third pair.  $\times 20$ .  
 10. Leg of fourth pair.  $\times 20$ .

Figures 3–10 are drawn from one of the paratypes.

\* Thiele, Zool. Anz. xxiii. p. 47 (1900); Mitth. Zool. Mus. Berlin, ii. p. 44. figs. 110–116 (1904).